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PROSTATIC CANCER SCREENING : KNOWLEDGE, ATTITUDES AND PRACTICES OF GAUTENG FAMILY PRACTITIONERS.

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A REPORT SUBMITTED TO THE FACULTY OF MEDICINE, UNIVERSITY OF THE WITWATERSRAND IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE MASTER OF FAMILY MEDICINE.

DECLARATION

I, Gonaseelan V. Naidoo, hereby declare that this report is my own work. it is being submitted in partial fulfilment for the degree Master of Family Medicine at the University of The Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.

This study has received ethical approval from the University of the Witwatersrand's Ethical Committee for Research on Human Subjects. PROTOCOL NO. M980121.

Signed at JOHANNESBURG on this the 19th day of APRIL, ~~19~~ 2000

Signed: 

Witness: _____

DEDICATION

DEDICATED TO MY WIFE MOGIE,

AND CHILDREN KUBERAN AND MIDHYA.

ABSTRACT

Background:

Despite the multitude of studies that have been carried out, controversy still exists as to the benefits of routine screening for prostate cancer. How often, and with what criteria, prostate cancer screening tests are conducted by family practitioners in South Africa, is unknown.

Objectives:

To establish the knowledge, attitudes and practices of Gauteng Family Practitioners, with regards to screening for prostate cancer; to determine if there are racial differences in screening practices in South Africa; and to determine whether uniform guidelines for screening are needed by family practitioners.

Materials and Methods:

Four hundred randomly selected family practitioners in Gauteng were chosen and asked to respond to a postal survey comprising 24 questions. A response rate of 23% (i.e. 88 completed questionnaires) was received.

Data Extraction and Results:

Whilst 87.4% of respondents felt that the Digital Rectal Examination (DRE) was effective in prostate cancer screening, a slightly lower proportion (75.6%) actually used the DRE in screening. Older doctors, i.e. >46 years old, use the DRE more than younger doctors for screening. The DRE alone was responsible for a pick-up of 114 asymptomatic cases of prostate cancer in the study sample in one year, and 315 patients in five years.

There was a high congruence between the number of patients that felt the prostate specific antigen (PSA) was an effective screening test (89.5%), and the number of doctors that actually used the PSA (84.5%).

The majority of doctors (88.6%) do not screen with the Transrectal Ultrasound (TRUS).

Most Doctors (83.0%) preferred doctor-initiated (as opposed to patient-initiated) screening.

Only 4 (10%) out of 42 respondents who felt they had received adequate knowledge about prostate cancer screening, obtained their knowledge as undergraduates. An overwhelming 96.5% of doctors felt that screening was the sole responsibility of the family practitioner, not specialist.

It was felt by the respondents that more Whites than Blacks (Africans, Indians, Coloureds) are screened for prostate cancer in South Africa. In addition, they felt that this may be due to the affordability of the tests, and greater accessibility to private, rather than public (clinic) medical facilities by White patients.

One-third of doctors prefer to screen annually from age 40, whilst more than 60% of doctors would prefer to screen annually from age 50. At age 70 onwards, equal numbers of doctors prefer to screen 6 monthly and annually.

The majority of doctors (97.7%) felt that there was a need for uniform guidelines for prostate cancer screening by South African family practitioners.

Conclusion:

Despite the global controversy surrounding prostate cancer screening, Gauteng family practitioners use the DRE and PSA extensively to screen for prostate cancer. Racial differences to screening do exist, with screening taking place predominantly amongst Whites in private family practice, rather than in Blacks in state hospital (clinic) practice. Uniform guidelines to screening are eagerly awaited by South African family practitioners.

It is recommended that further research be done to establish what proportion of Blacks to Whites are screened for prostate cancer in South Africa, and whether screening influences the pick-up rates for cancer of the prostate, as this study has suggested.

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Table of Contents

Title		Page
DECLARATION		I
DEDICATION		II
ABSTRACT		III
ACKNOWLEDGEMENTS		VI
TABLE OF CONTENTS		VII
LIST OF FIGURES		X
LIST OF TABLES		XI
1.	INTRODUCTION	
1.1	Background information regarding Prostate Cancer	1
1.2	Motivation for Study	2
2.	LITERATURE REVIEW	3
3.	METHODOLOGY	
3.1	Definition of Terms	9
3.2	Aim of Study	9
3.3	Objectives of Study	9
3.4	Study Design	10
3.5	Study Population and Sampling	11
3.6	Measurements	12
3.7	Ethical and Legal Considerations	13
3.8	Pilot Study	13
3.9	Logistics	14
3.10	Resources	14
3.11	Reporting of Data and Implementation of Results	14

Table of Contents *continued*

Title		Page
4.	**RESULTS**	
4.1	Responders and Non Responders	15
4.2	Age and Sex distribution of Responders	16
4.3	Ethnic Group that Respondents aligned themselves with	17
4.4	Qualifications of Respondents	19
4.5	Number of Years in Family Practice	23
4.6	Geographical Location of Practice	24
4.7	Peak Age of Incidence for Prostate Cancer in S.A.	25
4.8	Age Group at which Prostate Cancer death is most likely	26
4.9	Presymptomatic Early Diagnosis in Overall Survival	27
4.10	The DRE in Prostate Cancer Screening	28
4.11	The PSA in Prostate Cancer Screening	36
4.12	The Transrectal Ultrasound in Prostate Cancer Screening	40
4.13	*Patient versus Doctor - Initiated Screening*	44
4.14	Doctor Education Regarding Strategies for Prevention	46
4.15	Patients' Knowledge of Prostate Cancer Screening	48
4.16	The Preferred Practitioner in Screening	50
4.17	Racial Differences in Screening for Prostate Cancer	51
4.18	Frequency of Screening Tests	53
4.19	Uniform Guidelines for Prostate Cancer Screening in S.A.	55
4.20	Feedback to Participating Doctors	55
5.	**DISCUSSION**	
5.1	Response Rates	56
5.2	Demographics of Study Sample	59
5.3	Knowledge of Gauteng Family Practitioners regarding Prostate Cancer Epidemiology	62

Table of Contents *continued*

Title		Page
5.4	Attitudes and Practices of Gauteng Family Practitioners	64
	5.4.1 The DRE in Prostate Cancer Screening	64
	5.4.2 The PSA in Prostate Cancer Screening	66
	5.4.3 The TRUS in Prostate Cancer Screening	67
	5.4.4 Patient-Initiated versus Doctor-Initiated Screening	68
5.5	Doctors' and Patients' Knowledge	69
5.6	Racial differences in Screening for Prostate Cancer in South Africa	70
5.7	Guidelines for Prostate Cancer Screening	73
6.	**LIMITATIONS AND RECOMMENDATIONS**	
6.1	Bias	74
6.2	Limitations	74
6.3	Recommendations	75
7.	**CONCLUSION**	**77**
8.	**REFERENCES**	**78**
9.	**APPENDICES**	
A.	Research Protocol	
B.	Letter of Approval from Ethics Committee	
C.	Letter to General Practitioners informing them of proposed research	
D.	Research Questionnaire	

LIST OF FIGURES

Figure	Title	Page
1	Male - Female Distribution of Doctors	17
2	Respondents' years in family practice	24
3	Qualifications vs screening behaviour of doctors	44
4	Screening mode preferred by Doctors	45
5	Doctor Education Regarding Prostate Cancer	46
6	Respondents that request feedback	55
7	Age distribution of deaths from prostate cancer in the USA	63
8	The role of PSA and DRE in the diagnosis of Prostate Cancer	68

LIST OF TABLES

Table	Title	Page
1	Responders and Non-Responders	15
2	Age and sex distribution of respondents	17
3	Ethnic Group that respondents aligned themselves with	18
4	Undergraduate Universities	19
5	Year Undergraduate Degree Obtained	20
6	Postgraduate Qualifications	21
7	University at which Postgraduate Qualifications obtained	22
8	Year Postgraduate Qualifications Obtained	22
9	Number of years in family practice	23
10	Geographical Location of Respondents' practices	25
11	Peak age of Incidence for prostate cancer in S.A.	26
12	Age group at which death from prostate cancer death is most likely	26
13	Presymptomatic early diagnosis improves survival	27
14	Frequency of respondents that felt the DRE was an effective screening test	28
15	Number of respondents that used the DRE in screening	29
16	Age Groups of Respondents that use the DRE in screening	30
17	Frequency of respondents that felt they should use the DRE in screening	30
18	Respondents that screen and respondents that feel they should screen	31
19	Reasons for not using the DRE for prostate cancer screening	33
20	Frequency of subsequently confirmed diagnosis of Prostate Cancer in S.A. in one year, using DRE for screening	34
21	Frequency of subsequently confirmed diagnosis of Prostate Cancer in S.A. in five years, using DRE for screening	35
22	The PSA normal range	36
23	Frequency of respondents that felt PSA is an effective screening tool	37

LIST OF TABLES *continued*

Table	Title	Page
24	Frequency of respondents that use the PSA as a screening tool	37
25	Frequency of respondents that feel the PSA should be used as a screening tool	38
26	Frequency of respondents that feel PSA is effective, and those that use the PSA to screen	38
27	Frequency of respondents that use the PSA to screen, and those That feel they shou[illegible] use the PSA to screen	39
28	Stated Effectiveness of Transrectal Ultrasound as a Screening tool	40
29	Frequency of respondents that use the transrectal ultrasound as a screening tool	40
30	Frequency of respondents that feel the transrectal ultrasound should be used as a screening tool	41
31	Frequency of male and female respondents that feel TRUS should be used as a screening tool	42
32	Screening modalities and qualifications of respondents	43
33	Respondents perception of adequacy of education vs undergraduate university	47
34	Family physician qualifications vs education for cancer screening	48
35	Adequacy of Patients' Knowledge as viewed by all respondents	49
36	Adequacy of patients' knowledge, as viewed by family physicians	49
37	Respondents that felt the Specialist is solely responsible for prost[illegible]e cancer screening	50
38	Racial Differences in Screening	51
39	Frequency of respondents who felt more Whites than Blacks were screened	52
40	Race group of respondents that felt more Whites than Blacks were screened	53
41	Frequency of screening tests in Asymptomatic Patients	54
42	Frequency of Practitioners that seek Guidelines	55

1. INTRODUCTION

1.1 Background Information regarding Prostate Cancer

Prostate Cancer has been concisely summarised in the Oxford Medical Dictionary as follows:

> "A malignant tumour of the prostate gland, a common form of cancer in elder men. It may progress slowly over many years and give symptoms similar to those of benign enlargement of the prostate. Usually it has invaded locally, spread to regional lymph nodes, and metastasised to bone before clinical presentation. The tumour is associated with increased production of an enzyme, prostatic specific antigen. Drug treatment aimed at suppressing the production or effects of androgen, on which the tumour is dependent, includes oestrogen therapy and the administration of anti-androgens and LHRH analogues. Surgical treatment includes radical prostatectomy and orchidectomy".[1]

Adenocarcinoma is the commonest form of tumour of the prostate in men over 50 years of age, and the incidence increases with each decade.[2]

Sarcoma, undifferentiated prostatic carcinoma, squamous cell carcinoma and ductal transitional carcinoma, and occasionally metastatic tumours (from lung, melanoma, or lymphoma) are rare, and account for only 5% of all prostatic carcinomas.[3]

By the year 2000, the number of prostate cancer cases will have increased by 90%, and death from prostate cancer will increase by 37%.[4]

Prostate Cancer is the most common cancer reported in American men, with the third highest mortality rate.[5] It is one of the three leading causes of death from cancer among men in Canada.[6,7]

The average lifetime risk of developing cancer of the prostate is about 1 in 11 - higher than the risk of breast cancer in women.[8] Garnick quotes 1993 estimates that a 50 year old American man has an approximately 40% chance of developing microscopic prostate cancer during his lifetime, with only a 10% chance of being diagnosed with the disease.[4]

Very little research is available in this country with regards to prostate cancer, and whether screening for asymptomatic cancer is actively practised, and whether early screening influences the course of the disease.

1.2 Motivation for the Study

Prostatic cancer is a serious illness, with a high morbidity. Early detection of this cancer through screening procedures by family practitioners is likely to lead to a decreased morbidity.

Therefore an understanding of their knowledge, attitudes and practices is vital to any programme.

2. LITERATURE REVIEW

"Is cure possible in those for whom it is necessary, and is cure necessary in those for whom it is possible".

"Growing older is invariably fatal; prostate cancer is only sometimes so!"

- Willet Whitmore, quoted in "Prostate Cancer Screening : What we know and what we need to know".[9]

Prostate Cancer is a serious illness with a high morbidity and mortality. It is extremely common in Africa, Europe and the USA with Switzerland and Norway reporting the biggest incidences, and Japan the lowest.[10]

According to Dr. Freddy Sitas, Chairman of the National Cancer Registry in Johannesburg, cancer of the prostate is the second most frequently occurring cancer among South African men, after skin cancer. At least one in every 32 South African men suffers from prostate cancer, and about 2500 new cases are reported annually.[11]

Thirty to forty percent of men with newly diagnosed prostate cancer **cannot** be cured.[12] Yet, for men whose cancer is diagnosed early (localised), there is a 94% 5-year relative survival rate, and when diagnosis is made after the cancer has moved out of the prostate, the 5 year survival rate drops sharply to 29%.[13]

Ten year cure rates approaching 65% occur with localized prostatic carcinoma treated by medical prostatectomy or radiation therapy.[2] Thus it can be seen that early diagnosis definitely increases survival rates.

Despite prostate cancer being an important cause of morbidity and mortality among men, there are conflicting viewpoints on whether routine screening of asymptomatic men should indeed take place. There are three levels at which controversy rages:

(a) Should routine screening take place or not?

(b) What is/are the most appropriate methods of screening?

(c) Is screening beneficial to the patient, and does the costs of testing and resultant side effects as a consequence of screening and treatment (e.g. impotence in 25-70% of cases and incontinence is 5-20% of cases) outweigh the benefits (longevity and less pain).[14]

The Canadian Cancer Society has recommended that men over 40 years of age have a regular check up including a digital rectal examination (DRE) to detect changes in the prostate gland.[6]

The American Cancer Society and the US National Cancer Institute have also recommended an annual D.R.E. beginning at age 40. However, the US Preventive Services Task Force found insufficient evidence to recommend for, or against, routine D.R.E. as an effective screening test for prostate cancer in asymptomatic men.[6] They found that the DRE's sensitivity is limited because the examining finger can palpate only the posterior and lateral aspects of the gland, and that tumours may occur in inaccessible regions of the gland. Similarly, the DRE has limited specificity, producing a large number of false – positive results.[6] Another shortcoming of DRE is the subjectivity of the test, i.e. DRE findings are often described differently by different examiners, or even by the same examiner at different times.[15]

Despite these negative aspects surrounding the use of the DRE, Sagaloswky and Wilson who are quoted in Harrison's Principles of Internal Medicine claim that palpation of the prostate is the best predictor for the diagnosis of all stages of disease other than stage A.[4]

According to Whitmore's staging of prostate cancer, Stage A represents cancer not detectable by rectal examination, but found in a surgical specimen obtained during operation for prostatic hyperplasia or autopsy. Stage B disease is palpable but confined to the prostate. In stage C palpable tumour extends beyond the prostate, but there are no distant metastasis. In stage D, metastatic disease is present. Thus, except for Grade A tumour, the importance of the rectal examination in the routine physical examination of men cannot be stressed too strongly.[3]

The use of transrectal ultrasound (TRUS) and the serum tumour marker Prostate Specific Antigen (PSA) were also not recommended for routine screening in asymptomatic men.[6] PSA is a glycoprotein produced by the epithelial cells of the acini and ducts of the prostate gland. It's function is to liquefy the ejaculate, thus allowing for spermatozoa to be released. Besides it's use in screening for cancer of the prostate, PSA is **the** most sensitive marker available for monitoring cancer progression and response to therapy.[10] Although PSA is a highly sensitive tumour marker, it lacks specificity, because of difficulties in distinguishing between cancer and benign prostate inflammation. PSA may also be elevated at times of urinary retention, transurethral resection, prostate biopsy and ejaculation. Furthermore, 20-25% of patients with prostate cancer have normal values of PSA.[4,10]

The transrectal ultrasound is an important aid to diagnoses, only when carried out by a skilled operator. However, a normal TRUS Scan cannot exclude a prostate cancer, unless it is accompanied by a biopsy of the gland – (often done as six core biopsies, three from each lobe of the gland).[8]

Despite the Royal Australian College of General Practitioners (RACGP), the Australian Cancer Society and the Urological Society of Australasia recommending against routine screening for Prostate Cancer in asymptomatic men,[15] GP's in Southern Tasmania are unclear as to whether to screen or not.[16] Screening does however seem to be occurring at increasing rates in Australia.[15]

Similarly, despite the controversy about prostate cancer screening, the use of PSA testing in Canada has increased.[7]

The Cancer Association of South Africa recommends routine screening from age 50 annually. A recent report by Segone[10] suggests that White men be screened from age 50, and Blacks or those with a positive family history should be screened from age 40.

Ethics has also crept into the prostate cancer-screening debate. Neal and Hamdy[17] believe that it would be unethical to promote mass screening for early prostate cancer as a public health policy, until it is abundantly clear that treatment of early tumours substantially alters the course of the disease by preventing progression and improving survival. They believe though it would be ethically justified to screen men who are fully informed and educated about the consequences of screening, and the treatment options available.

According to the first large-scale randomised trial carried out by Professor Fernand Labrie in Quebec, routine screening for prostate cancer would significantly reduce mortality. There was a threefold (69% decrease) in prostate cancer death in favour of men who were screened.[18]

Due to the conflicting recommendations coming from around the globe, it was felt that family practitioners in South Africa may be confused as to whether to screen or not.

This study was thus undertaken to achieve a South African perspective on Prostate Cancer Screening amongst family practitioners. The first part of this study examined the knowledge, attitudes and practices of Gauteng family practitioners in relation to prostate cancer screening. It also examined the role that demographics (age, sex and education of respondents, and geographical location of practices) played in screening for prostate cancer.

The latter part of the study examined whether screening was appropriate and equal for all races in South Africa. Demark – Wahnerfried et al[19] found interesting and important differences existed between American Blacks and Whites in relation to access to screening; with a major factor being that Blacks are less likely to have a regular doctor. Hence screening was less likely to occur amongst Blacks. In South Africa, no information exists as to whether similar racial differences to screening exists.

Where this study is different to those carried out by Demark-Wahnerfried et al[19], and Smith et al[20, 21], is that **GP's** were asked to report on racial issues. In the above quoted studies **patients** were screened.

A similar KAP study undertaken by Sladden and Dickenson[16] examined general practitioners attitudes to screening for prostate and testicular cancer in Australia. They however did not assess the third modality of screening, i.e. transrectal ultrasound. Further, they did not give the reasons for non-screening in those they did not screen, nor did they examine if race played a role in screening patterns.

Whilst my study is also a KAP study that examines the knowledge and attitudes of family practitioners in Gauteng, it also aims to obtain information on the use of the TRUS and the role of race issues in screening patterns. Further, this study restricts itself to prostate cancer screening (the Australian study also included testicular cancer screening).

The idea of examining whether GP's preferred patient-initiated, rather than doctor-initiated screening, stemmed from another Australian KAP study, in which Weller et al examined the knowledge, attitudes and practices of GP's in relation to screening for colorectal cancer.[22] They found that generalists prefer patient-initiated screening.

Finally, with all the controversy in the literature relating to prostate cancer screening, Gauteng general practitioners were asked whether they preferred uniform guidelines for screening.

3. METHODOLOGY

3.1 Definitions of Terms

3.1.1 Screening

A Screening ; cedure is one that is applied to an unselected population to identify those members who are either diseased or at risk for a disease. [23]

3.1.2 Family Practitioner

Generalist doctor who works as a "non specialist", in the study area, attending to patients within the family, irrespective of the patients age group or specific ailment. The family practitioner may work in the private or public sector.

3.2 Aim of Study

To establish the knowledge, attitudes and practices of Gauteng family practitioners with regards to screening for prostate cancer.

3.3 Objectives of Study

3.3.1 To establish the demographic characteristics of the study population and to establish whether demographic variables influence the knowledge, attitudes and practices of Gauteng family practitioners.

3.3.2 To establish what knowledge exists amongst family practitioners with regard to screening for prostate cancer.

3.3.3 To determine to what extent family practitioners screen for prostate cancer.

3.3.4 To determine what tests are used for the diagnosis of prostate cancer.

3.3.5 To determine if there is a racial difference in the way screening is practised in South Africa.

3.3.6 To determine if the ethnicity of the practitioner influences screening.

3.3.7 To determine whether guidelines for prostatic screening are needed by family practitioners.

3.4 Study Design

A cross-sectional descriptive study was undertaken using a self-administered questionnaire.

3.5 Study Population and Sampling

There is no accurate sampling frame for family practitioners in South Africa. It is difficult to obtain a comprehensive, updated list of family practitioners in South Africa. The Academy of Family Practice list includes only those practitioners that are registered with the Academy. Some commercial lists are limited to those practitioners who have paid to have their names listed, and is "sold" to researchers. Other lists from mailing houses may leave out some practitioners considered by the pharmaceutical companies to be poor marketing targets.

The medical council list includes some practitioners who are out of the country, as well as some practitioners who may have retired. With these limitations, I opted to use the South African Medical Association (SAMA) register, which is considered to be the most comprehensive.

The study population included 2486 family practitioners in Gauteng, as defined by the listing as at January 1998. From this population, a simple random sample of 400 doctors was drawn.

The ideal sample size was calculated by the biostatistician to be 400; i.e. 16.0% of doctors would adequately represent the total study population.

From the list supplied it was impossible to indicate whether the address listed was a postal, home or practice address, thus making it difficult to stratify the practitioners in the sample according to practice area, however the postal code of the practice was requested in the questionnaire.

It was also not clear from the list what proportions of doctors sampled worked in the public and private sectors and regretfully this was not requested in the questionnaire.

Questionnaires were posted to the sample group, together with an independently returnable post card acknowledging receipt and completion of the questionnaire. It was envisaged that those doctors that did not return the questionnaires within one month would be telephoned to remind them to partake in the study. However, accurate updated information regarding the telephone numbers of the doctors in Gauteng was unavailable, and I had to rely on the numbers listed in the telephone directory.

Those doctors that did not return the post card within two months and whose telephone numbers were still valid, were telephoned to remind them to partake in the study. Fifty three practitioners were reminded in this way, but only 10 extra responses were received.

A stamped reply envelope was included in the original posting, to encourage return of completed questionnaires.

3.6 Measurements

The measuring tool is a self-administered questionnaire, consisting of twenty four questions. These questions comprise subsets for demographic data (questions 1-6), knowledge of doctors (questions 7-9), and attitudes and practices of doctors (questions 10-22). Question 23 dealt with the racial group of the doctor, and question 24 asked whether the doctor filling in the questionnaire would like feedback on the results of the survey.

These questions were devised, using the Australian studies as a guide.[16, 22] Permission from the authors was not obtained, because the study is not replicated. Four questions were used unchanged, but additional questions were added to obtain a South African perspective.

3.7 Ethical and Legal Considerations

All doctors were assured that confidentiality would be maintained at all times. Respondents were not asked to give information regarding their names, phone numbers, or physical addresses of their practices. A briefing letter was sent to the doctors informing them of the proposed research. Consent was sought in this letter. Where consent was not specifically signed for, a returned completed questionnaire was assumed to be written consent.

3.8 Pilot Studies

A pilot study was undertaken prior to the main study, to establish whether flaws existed in the study design/questionnaire. The pilot study was also undertaken to look into the logistics of problems in administration of the study. Ten doctors were asked to partake in the study, and they were excluded from the main study. From the pilot study, there were no changes to the questionnaire for the main study.

3.9 Logistics

From the time of posting of questionnaires to family practitioners (June 1998), to the time of receipt of completed questionnaires, four months were allowed before the study was declared closed for receipt of questionnaires. This lengthy period was allowed in an attempt to increase the response rate.

3.10 Resources

The cost of the study is expected to be approximately R6000. The study was partly funded by Abbot Laboratories.

3.11 Reporting of Data and Implementations of Results

Doctors that indicated on the separately returned postcard that they would like feedback of the research, will be provided with such information.

4. RESULTS

Note:

Although Chi Square tests were performed to check for significance of variables, the small numbers in most instances made the interpretation of such results impossible, and are therefore not stated unless applicable.

4.1 Responders and Non Responders

Using the returned postcard as a means of detecting responses, after a wait of two months, 53 non-responders whose telephone numbers were still valid were reminded telephonically about the research assistance required. Seven doctors then requested new questionnaires be sent to them, which was duly undertaken. After a wait of four months (June till September 1998, both months inclusive), the responses were as follows (Table 1):

Table 1: Responders and Non-Responders n = 400

Total returned questionnaires	:	138
Total completed questionnaires	:	88
Sampling Error	:	13
Percentage of true respondents	:	23%

The sampling error was determined as follows:

- wrong / incorrect address (3)
- emigrated from S.A. (2), as reported by relatives
- retired from medical practice (2)
- deceased (1), as reported by wife
- not involved in GP practice anymore (2), with one doctor stating that he was involved only in anti-TB programmes.
- do not see male patients / refer directly to urologist if prostate pathology suspected (3)

Thirty seven (37) doctors did not consent to taking part in this study. No reasons for non-participation were given. It was not possible to obtain information regarding the non-responders. We therefore do not know if they are a particular biased group.

4.2 Age and Sex distribution of Responders

There was a fairly even distribution of respondents in the age groups 31-45 years, 36-40 and 41-45 years, with almost a third of the respondents (31.8%) being above 45 years of age.

There were also a small number of young graduates (5,7%). Forty doctors (45,5%) were under the age of 40 (Table 2).

Table 2: Age and sex distribution of respondents

Age (years)	Males		Females		Total	
24 – 30	4	(5.8%)	1	(5.3%)	5	(5.7%)
31 – 35	9	(13.0%)	8	(42.1%)	17	(19.3%)
36 – 40	16	(23.2%)	2	(10.5%)	18	(20.5%)
41 – 45	17	(24.6%)	3	(15.8%)	20	(22.7%)
46+	23	(33.3%)	5	(26.3%)	28	(31.8%)
Total	**69**	**(78.8%)**	**19**	**(21.6%)**	**88**	**(100%)**

n = 88

Almost four times more males than females participated in the survey (Figure 1).

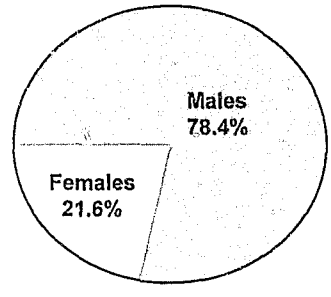

Figure 1: Male – Female Distribution of Doctors

The largest number of female respondents was in the age group 31-35 years (42.1%) whilst the largest number of male respondents was in the age group 46 years and over.

4.3 Ethnic group that respondents aligned themselves with

Fifty eight doctors (69.9%) aligned themselves to the White Ethnic Group, 20 doctors (27.1%) to Black, 8 doctors (9.6%) Indian and 3 doctors (3.5%) Coloured Ethnic Group (Table 3).

Table 3: Ethnic Group that respondents aligned themselves with

Ethnic Group	Frequency	Percentage (%)
Black	20	24.1
White	58	69.9
Coloured	3	3.6
Indian	8	9.6
Other	1	1.2
TOTAL	**90**	**100**

n = 83

In total there were 83 responders to this question, five choosing not to answer at all. There were, however, 90 responses. Clearly then, some responders chose more than one ethnic group.

Two respondents challenged the validity of this question.

It is possible that some doctors assumed the question related to the ethnic group(s) of patients seen at the practice, rather than the doctors' ethnic group.

4.4 Qualifications of Respondents

Most of the respondents had their undergraduate training in Gauteng (63%), 33.3% graduating at Pretoria University, and 23.5% graduating at Wits University (Table 4).

Table 4: U dergraduate Universities

University	Frequency	Percentage (%)
Pretoria	27	33.3
Cape Town	6	7.4
Bloemfontein	2	2.5
Witwatersrand	19	23.5
Potchefstroom	1	1.2
Medunsa	5	6.2
Natal	8	9.9
Stellenbosch	6	7.4
Outside S.A.	7	8.6
Total	**81**	**100**

Twenty four of these degrees were obtained between years 1970-1979, and 39 degrees were obtained between years 1980-1989 (Table 5).

Table 5: Year Undergraduate Degree Obtained

Undergraduate Year	Frequency	Percentage (%)
1960 – 1969	6	7.59
1970 – 1979	24	30.38
1980 – 1989	39	49.31
after 1990	10	12.66
Total	**79**	

n = 79

The largest number of postgraduate qualifications (37.5%) was awarded by the University of the Witwatersrand, (n=12) whilst Pretoria University and the College of Medicine of S.A. awarded 6 (18.75%) and 5 (15.63%) postgraduate qualifications respectively (Table 6).

Only 10 respondents (11.36%) had postgraduate qualifications in family medicine, with seven (7) doctors having obtained a degree in family medicine (MFamMed or MPraxMed) and three (3) doctors having obtained the College diploma (M.C.F.P.).

Table 6: Postgraduate Qualifications

Post Graduate Qualifications	Frequency	Percentage (%)
MFamMed / MPraxMed	7	20.6
MCFP / MFGP	3	8.8
Diploma in Anaesthetics	4	11.8
M. Pharm	2	5.9
FCP I	1	2.9
DTM + H	6	17.6
DOH	4	11.8
DCH	2	5.9
MFHOM	1	2.9
Other Medical	3	8.8
Science	1	2.9
Total	**34**	**100**

Twelve (37.5%) of postgraduate qualifications were awarded by the University of the Witwatersrand, followed by Pretoria University (18.8%) and the College of Medicine of S.A. (15.0%) (Table 7).

Table 7: University at which Postgraduate Qualifications obtained

University Post Graduate Qualifications	Frequency	Percentage (%)
Pretoria	6	18.8
Bloemfontein	1	3.1
Witwatersrand	12	37.5
Unisa	2	6.3
Potchefstroom	2	6.3
Natal	1	3.1
College of Medicine	5	15.6
Outside S.A.	3	9.4
Total	**32**	**100**

Most of the post graduate qualifications were obtained between years 1981 – 1990, as shown in Table 8.

Table 8: Year Postgraduate Qualifications Obtained

Year Postgraduate Qualification Obtained	Frequency	Percentage (%)
1971 – 1980	4	12.90
1981 – 1990	15	48.39
1991 – 1998	12	38.71
Total	**31**	**100**

4.5 Number of years in family practice.

The majority of respondent's (27) were in family practice for 6–10 years. The mean number of years in family practice being 12, 9 years (S.D. 7) One doctor had been in practice for 33 years (Table 9 and Figure 2).

Table 9: Number of years in family practice

Years	Frequency	Percentage (%)
1 – 5	15	17.24
6 – 10	27	31.03
11 –15	17	19.54
16 – 20	14	16.09
21 – 25	11	12.64
26 – 30	2	2.31
>30	1	1.15
Total	**87**	**100**

N = 87 mean : 12.862 Std Dev 7,391

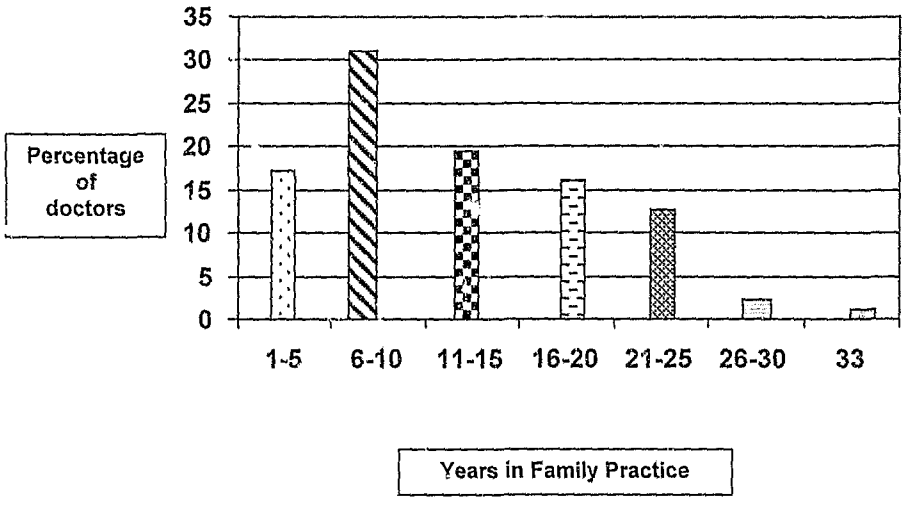

Figure 2: Respondents' years in family practice

4.6 Geographical location of practice

Respondents were received from across the whole of Gauteng, from predominantly urban "white" areas to township "black" areas. Most of the doctors sampled had their practices in Johannesburg and Pretoria (Table 10).

Table 10: Geographical location of the respondents' practices

Area	Number of Doctor's	Percentage (%)
Townships (including Soweto)	8	9.75
Johannesburg + Suburbs	25	30.49
East Rand	16	19.51
West Rand (excluding Soweto)	9	10.98
Pretoria + Suburbs	18	21.95
Vaal Triangle	6	7.32
Total	**82**	

n = 82

4.7 Peak Age of Incidence for Prostate Cancer in S.A.

In response to the question "What is the peak age of incidence for prostate cancer?", only 33.7% of doctors (n=29) answered 70-79 years, and 5.8% (n=5) answered over 80 years (Table 11). According to Sladden and Dickenson, the largest number of patients with prostate cancer in Australia is in the age group 70-79 years, although incidence rises steadily with increasing age, and the highest incidence occurs in the age group 80 years and over.[16] No comparative figures are available for South Africa.

Table 11: Peak age of incidence for prostate cancer in S.A.

Age (Years)	Frequency	Percentage (%)
40 – 49	2	2.3
50 – 59	14	16.3
60 – 69	36	41.9
70 – 79	29	33.7
> 80	5	5.8
TOTAL	**86**	**100**

4.8 Age Group at which Prostate Cancer death is most likely.

(a) When asked to tick in which age group deaths from prostate cancer was most likely, half of the respondents (50.6%) stated the age group 70-79 years, and 26.5% of respondents stated the age group 60-69 years (Table 12).

Table 12: Age group at which prostate cancer death is most likely

Age (Years)	Frequency	Percentage (%)
40 – 49	2	2.4
50 – 59	7	8.4
60 – 69	22	26.5
70 – 79	42	50.6
> 80	10	12.0
TOTAL	**83**	**100**

(b) According to the Australian Institute of Health and Welfare, the age group with the most number of deaths is 70-79 years, although the highest mortality rate occurs in the age group 80 years and over[16]. No comparative figures are available for South Africa.

4.9 Presymptomatic early diagnosis in overall survival.

Using a 5-point scale, respondents were asked to give their responses to the statement "Early diagnosis (e.g. in the presymtomatic phase) of prostate cancer improves overall survival".

Table 13 shows that 67.04% of respondents agreed strongly that early diagnosis in the presymptomatic phase improves overall survival, whilst only 4.5% disagreed. There were no responses in the "unsure" and "strongly disagree" categories. There was a 95.5% cumulative agreement that early diagnosis improved survival.

Table 13: Presymptomatic early diagnosis improves survival

Comments	Frequency	Percentage (%)
Strongly Agree	59	67.04
Agree	25	28.41
Disagree	4	4.55
TOTAL	**88**	**100**

It is, however disconcerting that 4.5% disagreed!

4.10 The Digital Rectal Examination (DRE) in Prostate Cancer Screening.

When asked whether the DRE was effective in prostate cancer screening, 87.4% of respondents (n=76) agreed that it was effective (Table 14).

Table 14: Frequency of respondents that felt the DRE was an effective screening test

DRE Effective?	Frequency	Percentage (%)
Yes	76	87.4
No	5	5.7
Don't know	6	6.9
TOTAL	**87**	**100**

Only 5.7% of doctors surveyed felt the DRE was ineffective in prostate cancer screening and 6.9% did not know whether it was effective or not.

When asked whether they used the DRE in screening for prostate cancer, 75.6% of respondents answered "YES" (Table 15).

Table 15: Number of respondents that used the DRE in screening

Do you use DRE in Screening	Frequency	Percentage (%)
Yes	65	75.6
No	21	24.4
TOTAL	**86**	**100**

There was no statistical difference between male and female respondents in the use of the DRE in screening ($p = 0,948$)

Of the respondents that said they used the DRE in screening, 40 doctors (61.5%) were aged 41 years and above, i.e. "older" doctors tend to use the DRE more than the younger doctors (Table 16).

Table 16: Age Groups of Respondents that use the DRE in screening

Age Groups of Respondents	Screen with DRE				TOTAL	
	Yes		No			
24 – 30 years	3	(4.6%)	2	(9.5%)	5	(5.8%)
31 – 35 years	10	(15.4%)	6	(28.6%)	16	(18.6%)
36 – 40 years	12	(18.5%)	5	(23.8%)	17	(19.8%)
41 – 45 years	16	(24.6%)	4	(19.0%)	20	(23.3%)
+ 46 years	24	(36.9%)	4	(19.0%)	28	(32.6%)
Total	**65**	**(75.6%)**	**21**	**(24.4%)**	**86**	**(100%)**

p = 0,387

Statistical significance was not reached (p=0,387) due to the small sample size.

When asked whether they should use the DRE in screening for prostate cancer, 92.4% of respondents answered "YES" (Table 17).

Table 17: Frequency of respondents that felt they should use the DRE in screening

Should you use the DRE in Screening	Frequency	Percentage (%)
Yes	73	92.4
No	6	7.6
TOTAL	**79**	**100**

Whilst 92.4% of respondents say they should use the DRE in screening, only 74.4% actually used the DRE (Table 18). This represents a statistically significant difference in values and value-indicators (p = 0,00015).

Table 18: Respondents that screen and respondents that feel they should screen

DRE : Do Screen	DRE : Should Screen				Total	
	Yes		No			
Yes	58	(80.6%)	0	(0.0%)	58	(74.4%)
No	14	(19.4%)	6	(100%)	20	(25.6%)
TOTAL	**72**	**(92.3%)**	**6**	**(7.7%)**	**78**	**(100%)**

Even though only 24.4% (n=21) of respondents said they did not use the DRE in screening, 40.91% (n=36) felt it appropriate to give reasons (from a given list of categories) for not using the DRE for prostate cancer screening (Table 19).

Of those that did not use the DRE for screening;

- 6 respondents (16.67%) did not have time for screening.

- 2 respondents (5.56%) were influenced by the sex difference (i.e. female doctor with male patients)

- 3 respondents (8.33%) thought it to be personally distasteful, whilst 2 (5.56%) thought screening was a waste of time.

- 4 respondents (11.11%) felt that patients may be uncomfortable with rectal examinations.

- Other reasons included inexperience, seeing only selected patients, referral of all patients with urological problems to urologists, and not involved in clinical practice.

Table 19: Reasons for not using the DRE for prostate cancer screening

Reason (s)	Number of Respondents	Percentage (%) of Respondents
Sex difference, i.e. female doctors	2	5.56
I have no time for screening	6	16.66
Screening is a waste of time	2	5.56
I find it personally distasteful	3	8.33
Patient's could question my sexual preference	2	5.56
Patient's will perceive me as being odd	2	5.56
I find it uncomfortable with gay/homosexual patients	1	2.77
Religious regions	2	5.56
Patients are uncomfortable with rectal examinations	4	11.11
Doctor's inexperience	2	5.56
Refer patients with prostate problems to urologist	2	5.56
Other	8	22.22
TOTAL	**36**	**100%**

In response to the question "In how many asymptomatic patients in your practice has a DRE led to a subsequently confirmed diagnosis of prostate cancer over the last 12 months?" 38 respondents answered 1-5 patients (Table 20). If three is used as the mean of 1-5 patients, then 114 patients were diagnosed by 64 doctors (79%) in one year using the DRE. If all 81 doctors (100%) used the DRE in screening, one would expect to diagnose 144 patients with cancer. This would represent an extra case finding of 30 patients per year, all things being equal.

Table 20: Frequency of subsequently confirmed diagnosis of Prostate Cancer in S.A. in one year, using DRE for screening

Number of Patients confirmed in one year	Screen with DRE		Total
	Yes	No	
Zero	27 (42.2%)	16 (94.1%)	43 (53.1%)
1-5	37 (57.8%)	1 (5.9%)	38 (46.9%)
TOTAL	**64 (79.0%)**	**17 (21.0%)**	**81 (100%)**

($p < 0,05$)

Of those respondents that did not use the DRE in screening, 1 respondent had between 1-5 patients subsequently diagnosed with prostate cancer in one year. These patients were possibly diagnosed by a specialist or another generalist doctor.

Over a five (5) year period, 37 GP's (45.7%) used the DRE as an initial test in diagnosing between 1-5 patients with CA Prostate. Similarly 18 GPs' (22.2%) diagnosed between 6-10 positive cases, and 6 GP's diagnosed more than 10 patients with CA Prostate (Table 21).

Table 21: Frequency of subsequently confirmed diagnosis of Prostate Cancer in S.A. in five years, using DRE for screening

Number of Patients confirmed in five years	Screen with DRE		Total
	Yes	No	
Zero	10 (15.4%)	10 (62.5%)	20 (24.7%)
1 - 5 patients	32 (49.2%)	5 (31.3%)	37 (45.7%)
6 – 10 patients	17 (26.2%)	1 (6.3%)	18 (22.2%)
> 10 patients	6 (9.2%)	0 (0.0%)	6 (7.4%)
TOTALs	**65 (80.2%)**	**16 (19.8%)**	**81 (100%)**

Relying on the memory of the doctor, and using 3 as the mean of 1-5 patients, 8 as the mean of 6-10 patients, and taking an arbitrary number of 12 as being >10 patients, then the 61 doctors that detected cancer using the DRE would have detected 315 patients in 5 years, all things being equal.

4.11 The PSA in Prostate Cancer Screening in asymptomatic patients.

When asked to tick from a given list of PSA values, 84% of respondents (n=68) correctly answered that a Prostate Specific Antigen (PSA) level of ‹ 4 is considered to be within normal limits.

Table 22: The PSA normal range

PSA Level (range)	Frequency	Percentage (%)
< 4	68	84.0
< 10	9	11.1
< 15	2	2.5
< 20	2	2.5
TOTAL	81	100

When asked whether the PSA was effective in prostate cancer screening, 77 respondents (89.5%) indicated "yes" (Table 23).

Table 23: Frequency of respondents that felt the PSA is an effective screening tool

Frequency of Doctors – PSA effective screening tool	Frequency	Percentage (%)
Yes	77	89.5
No	1	1.2
Don't Know	8	9.3
TOTAL	**86**	**100**

When asked whether they used the PSA in screening for prostate cancer, 71 respondents (84.5%) answered "yes" (Table 24)

Table 24: Frequency of respondents that use the PSA as a screening tool

Frequency of Doctors – Is PSA used	Frequency	Percentage (%)
Yes	71	84.5
No	13	15.5
TOTAL	**84**	**100**

There was a high congruence between the number of respondents that felt the PSA was an effective screening test (89.5%), and the number of respondents that actually screened using the PSA (84.5%).

When considering use of the PSA test, there was no statistical difference between male and female doctors.

In response to the question. "Should you screen using the PSA?" almost all respondents (98.7%; n=78) felt that one should screen using the PSA as a tool (Table 25)

Table 25: Frequency of respondents that feel the PSA should be used as a screening tool

Should you Screen?	Frequency	Percentage (%)
Yes	78	98.7
No	1	1.3
TOTAL	79	100

Although one respondent felt that the PSA was ineffective in screening for prostate cancer, the respondent still used the PSA test (Table 26). This was possibly due to patient or peer pressure to use the test

Table 26: Frequency of respondents that feel PSA is effective, and those that use the PSA to screen

PSA : Effective	PSA : Do Screen				Total	
	Yes		No			
Yes	68	(95.8%)	8	(66.7%)	76	(91.6%)
No	1	(1.4%)	0	(0.0%)	1	(1.2%)
Unsure	2	(2.8%)	4	(33.3%)	6	(7.2%)
TOTAL	71	(85.5%)	12	(14.5%)	83	(100%)

Ten respondents (13.2%) that felt the PSA should be used in prostate cancer screening, actually did not use the PSA to screen (Table 27). This study failed to elucidate the reasons for not using the PSA in screening (e.g. financial or time constraints), as respondents were not asked to give reasons for their answers.

Table 27: Frequency of respondents that use the PSA to screen, and those that feel they should use the PSA

PSA : Do Screen	PSA : Should Screen				Total	
	Yes		No			
Yes	66	(86.8%)	0	(0.0%)	66	(85.7%)
No	10	(13.2%)	1	(100%)	11	(14.3%)
TOTAL	**76**	**(98.7%)**	**1**	**(1.3%)**	**77**	**(100%)**

There was a positive correlation between the number of doctors that used the DRE for screening (75.6%) and the number of doctors that use the PSA for screening (84.5%).

4.12 The Transrectal Ultrasound in Prostate Cancer Screening in asymptomatic patients.

Whilst 64.3% of respondents (n=54) felt that the Transrectal Ultrasound (TRUS) was effective in screening asymptomatic patients, about one-third of doctors (34.5%) remained unsure of its value (Table 28).

Table 28: Stated Effectiveness of Transrectal Ultrasound as a Screening tool

Is Ultrasound Effective?	Frequency	Percentage (%)
Yes	54	64.3
No	1	1.2
Unsure	29	34.5
TOTAL	**84**	**100**

The majority of respondents, however (88.6%; n=70) did not screen with the transrectal ultrasound (Table 29)

Table 29: Frequency of respondents that use the transrectal ultrasound as a screening tool

Do you screen using Ultrasound	Frequency	Percentage (%)
Yes	8	10.0
No	70	88.6
Unsure	1	1.3
TOTAL	**79**	**100**

Close to half the respondents (46.7%; n=35) felt one should not use the transrectal ultrasound as a screening tool for asymptomatic prostate cancer (Table 30).

Table 30: Frequency of respondents that feel the transrectal ultrasound should be used as a screening tool

Should Ultrasound be used to screen?	Frequency	Percentage (%)
Yes	19	25.3
No	35	46.7
Unsure	21	28.0
TOTAL	**75**	**100**

The discrepancies in answers between those that felt TRUS was effective in screening, those that used the TRUS and those that feel they should use the TRUS could imply that the transrectal ultrasound is viewed by GPs' as an effective tool in specialist hands, rather than in generalist hands.

In considering whether more male respondents than female respondents fel' that the TRUS should be used for prostate cancer screening, it was found that most of the 25.3% of respondents that felt that the TRUS should be used were males (89.5%). Only 12.5% of female respondents felt that the TRUS should be used (Table 31).

Table 31: Frequency of male and female respondents that feel TRUS should be used as a screening tool

Respondents Gender	TRUS : Should use			Total
	Agree	Disagree	Unsure	
Male	17 28.8% 89.5%	30 50.8% 85.7%	12 20.3% 57.1%	59 (78.7%)
Female	2 12.5% 10.5%	5 31.3% 14.3%	9 56.3% 42.9%	16 (21.3%)
Total	**19 (25.3%)**	**35 (46.7%)**	**21 (28.0%)**	**75 (100%)**

In considering whether post graduate qualifications affected the way doctors screened for prostate cancer, there was little difference in screening behaviour between those respondents with postgraduate family medicine qualifications, those with other postgraduate qualifications, and those with only the basic undergraduate degree (Table 32). The exception was in the use of the TRUS, where family physicians tendered not to use the TRUS (Figure 3).

Table 32: Screening modalities and qualifications of respondents

		POST GRADUATE QUALIFICATIONS		TOTAL
		Family Medicine	Other	
DRE	Effective	100	87.5	87.4
	Do Screen	80	91.3	75.6
	Should Screen	90	95.2	92.4
PSA	Effective	100	82.6	89.5
	Do Screen	100	85.7	84.5
	Should Screen	90	100	98.7
TRUS	Effective	60	77.3	74.3
	Do Screen	0	13	10
	Should Screen	10	52.6	25.3

(figures in percentages)

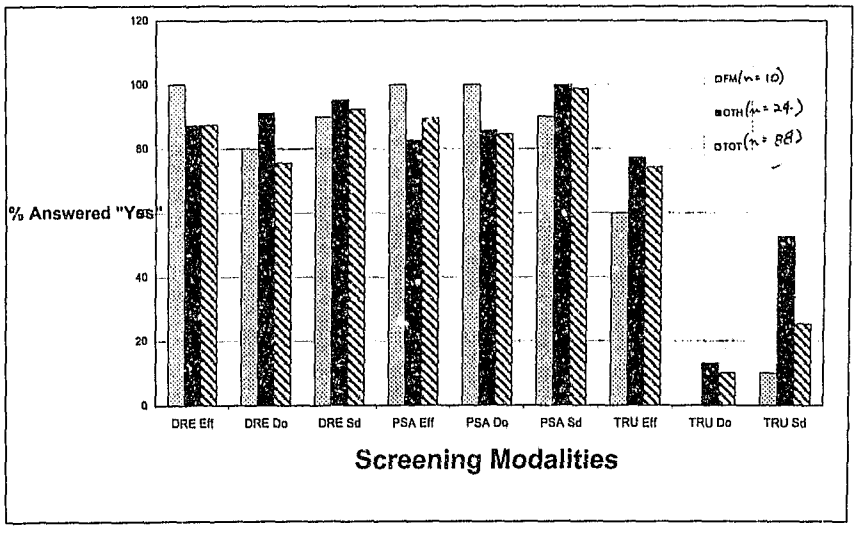

Figure 3: Qualifications vs screening behaviour of doctors

4.13 Patient versus Doctor - Initiated Screening.

In response to the question "Do you prefer patient initiated screening (i.e. the patient asks) or doctor initiated screening (i.e. the doctor determines when to screen), 73 respondents (83.0%) preferred doctor initiated screening, and 46.6% of respondents (n=41) preferred patient-initiated screening. It is clear that some doctors have indicated a preference for both options (Figure 4).

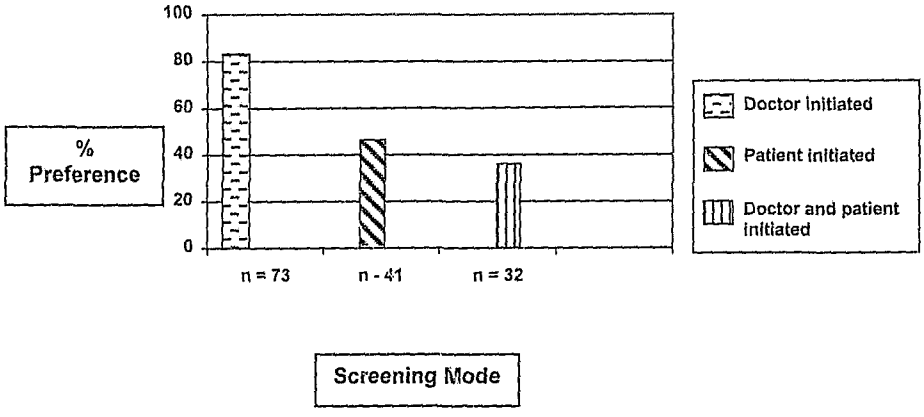

Figure 4: Screening mode preferred by Doctors

Some of the reasons advanced for doctor initiated screening as opposed to patient-initiated screening, included:

- Patients do not know about CA Prostate (15.91%; n=14)
- Screening depends on risk factors and symptoms (10.23%; n=9)
- Screening is related to patient's age group (7.95%; n=7)
- Patients are shy and may want to avoid the examination (9.09%; n=8)
- Should be part of a general examination (4.55%; n=4)

4.14 Doctor Education regarding Strategies for Prevention of Prostate Cancer.

In question 16, respondents were asked whether they agreed with the statement "I have received adequate education about strategies for the prevention of prostate cancer".

Whilst 51.85%% (n=42) of respondents agreed that they had received adequate education about strategies for prevention of prostate cancer, a significant proportion of respondents i.e. 35.80% (n=29) disagreed. Ten respondents (12.45%) were unsure (Figure 5).

In retrospect, this was a poorly worded question, since it really refers to secondary prevention (i.e. screening) for prostate cancer, and not the term "prevention" on its own. However, since nearly 52% of respondents stated that they had received adequate education, one may be permitted to assume that their interpretation of the question was related to the adequacy of education about prostate cancer. Therefore, of importance, is the significant proportion of respondents (35.8%) who felt that their education was inadequate.

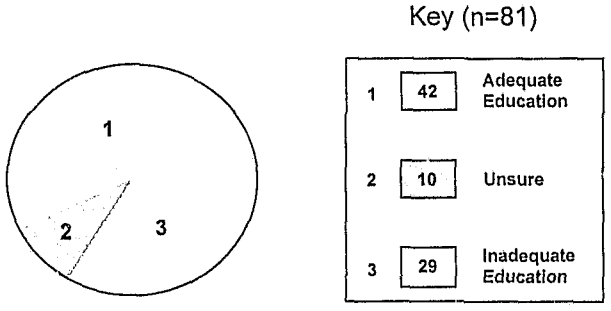

Figure 5: Doctor Education Regarding Prostate Cancer

There was no significant difference regarding education between respondents from the various undergraduate universities, i.e. these findings concurred across the doctors from different universities (Table 33).

Table 33: Respondents perception of adequacy of education vs undergraduate university

Education Adequate	Undergraduate University								
	PTA	CT	BLM	WITS	POTCH	MED	NATAL	ST/BOSCH	Outside SA
Strongly Agree	3	1	0	3	0	1	0	1	0
Agree	13	3	0	7	1	3	2	2	2
Unsure	4	1	0	2	0	1	1	0	1
Disagree	6	1	2	5	0	0	5	3	4
Strongly Disagree	1	0	0	2	0	0	0	0	0
Total	**27**	**6**	**2**	**19**	**1**	**5**	**8**	**6**	**7**

P value = 0,8952

Statistical significance was not reached (p=0,8952), and in addition the samples in each category were too small to infer any significance from the results.

Only 50% of respondents with postgraduate family medicine qualifications agreed that they had received adequate education about strategies for the prevention of prostate cancer (Table 34).

Table 34: Family physician qualifications vs education for cancer screening

Respondents' education adequate	Post graduate family medicine		Total
	+	-	
Strongly agree	1	1	2
Agree	4	11	15
Unsure	2	1	3
Disagree	3	10	13
Strongly disagree	0	1	1
TOTAL	**10**	**24**	**34**

Of all respondents that felt they had received adequate knowledge, most of the knowledge obtained was from postgraduate teaching, i.e. journals/specialists/CME (n=11 or 27.5%). Only 10% of doctors (n=4) obtained their knowledge as undergraduates. This contrasts with the nine respondents who felt that prostate cancer prevention was either not taught or there was inadequate teaching at universities.

4.15 Patients' Knowledge of Prostate Cancer Screening

In question 17, respondents were asked whether they agreed with the statement "The knowledge of patients with respect to prostate cancer, is adequate".

Only 15 respondents (17.1%) agreed that patients possessed adequate knowledge. Sixty nine GPs' (78.4%) disagreed that patients were adequately knowledgeable on the subject (Table 35).

Eighteen of this latter group of doctors used the word **"ignorant"** to describe their patients' knowledge.

Table 35: Adequacy of Patients' Knowledge as viewed by all respondents

Knowledge Adequate	Frequency	Percentage (%)
Agree	15	17.1
Don't Know	4	4.5
Disagree	69	78.4
TOTAL	**88**	**100**

None of the doctors with postgraduate family medicine qualifications agreed with the statement that "the knowledge of patients with respect to prostate cancer is adequate" (Table 36)

Table 36: Adequacy of patients' knowledge, as viewed by family physicians

Knowledge of *patient adequate*	Post graduate family medicine		Total
	+	-	
Strongly agree	0	1	1
Agree	0	2	2
Unsure	1	2	3
Disagree	8	14	22
Strongly disagree	1	5	6
TOTAL	**10**	**24**	**34**

4.16 The Preferred Practitioner in Screening

When asked to respond to the statement "Cancer screening is the sole responsibility of the Specialist, not family practitioner", 96.5% (n=85) of respondents disagreed (Table 37).

Table 37: Respondents that felt that the Specialist is solely responsible for prostate cancer screening

Specialist is solely responsible for screening	Frequency	Percentage (%)
Agree	3	3.4
Disagree	85	96.5
TOTAL	**88**	**100**

Of the explanations given for their choices, 29 respondents (70.73%) felt that the GP is the primary "gate-keeper"; 12,2% (n=5) of doctors felt that the patient should be referred to a specialist for further investigation, whilst 7.32% of respondents (n=3) felt that the specialists do not spend adequate time with the patient, and do not examine all systems in the patient. Only one respondent felt that it was a shared equal responsibility between the GP and specialist.

4.17 Racial Differences in Screening for Prostate Cancer

Questions 19 and 20 examined racial issues related to screening.

In question 19, respondents were asked "Is there a racial difference in the way that screening for prostate cancer is done in S.A.?"

Whilst 51.7% (n=45) of doctors were unsure as to whether there was a racial difference, almost a quarter of the respondents (23.0% or n=20) felt that a racial difference did exist in screening programmes (Table 38).

Table 38: Racial Differences in Screening

Is there a Racial Difference in Screening	Frequency	Percentage (%)
Yes	20	23.0
No	22	25.3
Unsure	45	51.7
TOTAL	**87**	**100**

Respondents were asked to give reasons for their responses. The 27 open-ended responses included:

- Blacks are generally unable to afford screening tests as the majority are not on medical aid (37.04%; n=10).

- state health institutions did not practice screening procedures on black patients (25.92%; n=7).

- Prostate cancer was rare amongst blacks (7.41%; n=2).

In question 20, respondents were asked whether "More Whites than Blacks (Africans, Coloureds, Indians) are screened for prostate cancer in S.A.?"

Over half the respondents (50.6%) agreed that more Whites than Blacks are screened (Table 39).

Table 39: Frequency of respondents who felt that more Whites than Blacks were screened

More Whites are Screened	Frequency	Percentage (%)
Agree	44	50.6
Disagree	7	8.0
Unsure	36	41.4
TOTAL	**87**	**100**

In this open-ended question, the main reasons given for this increased screening in Whites (relative to Blacks) included:

- Whites have affordability and therefore access to private treatments (59.5%; n=22), including screening tests.
- Whites are more aware of prostate cancer, and therefore complain more (29.5%; n=11).
- 8.1% (n=3) respondents felt that equal medicine must be practised.

In comparing whether "Black" or "White" doctors felt that more White patients than Black patients were screened for prostate cancer in South Africa, similar responses were received from both groups of doctors.

Ten Black doctors (50%) and 28 White doctors (49.12%) agreed with the statement "More Whites than Blacks are screened for prostate cancer in S.A." (Table 40).

Table 40: Race group of respondents that felt more Whites than Blacks were screened

More Whites than Blacks are Screened	Black Doctors	White Doctors	Total
Agree	10 (50%)	28 (49.12%)	38 (49.35%)
Disagree	2 (10%)	4 (7.02%)	6 (7.79%)
Unsure	8 (40%)	25 (43.86%)	33 (42.86%)
TOTAL	**20 (25.97%)**	**57 (74.03%)**	**77 (100%)**

4.18 Frequency of Screening Tests

In question 22, respondents were asked to tick how often prostate cancer screening tests should be done in the different patient age groups.

Most respondents (i.e. > 50%) felt that screening should **never** be done in asymptomatic patients before age 30, with a third of doctors (33.3%) wanting to screen from age 40 annually, and 27.4% wanting to screen every second year. At ages 50-60 years, more that 60% of respondents felt that screening should be done annually. At ages 70 and 80, approximately equal numbers of respondents felt that screening should be performed 6 monthly and annually (Table 41).

Table 41: Frequency of Screening Tests in Asymptomatic Patients

Age of Patient (years)	Every six (6) months	Annually	Every two (2) years	Every five (5) years	Every 10 (ten) years	Never
20	-	-	2 (2.7)	16 (21.6)	9 (12.2)	47 (63.5)
30	-	3 (3.9)	10 (13.2)	16 (21 1)	9 (11.8)	38 (50.0)
40	-	28 (33.3)	23 (27.4)	15 (17.9)	9 (10.7)	9 (10.7)
50	7 (8.3)	51 (60.7)	14 (16.7)	8 (9.5)	4 (4.8)	-
60	22 (25.6)	53 (61.6)	6 (7)	5 (5.8)	-	-
70	38 (44.7)	41 (48.2)	3 (3.5)	3 (3.5)	-	-
80	38 (46.9)	39 (48.1)	1 (1.2)	3 (3.7)	-	-

Percentages in brackets

It is of concern that 4.8% of doctors would want to screen every 10 years from age 50. It is of similar concern that a significant number of doctors (21.2%) would start to screen too early for prostate cancer i.e. every five years from age 20.

4.19 Uniform guidelines for Prostate Cancer Screening in S.A.

In response to the statement "There is a need for uniform guidelines for prostate cancer screening by family practitioners in S.A.", an overwhelming 97.7% (n=86) of doctors surveyed agreed (Table 42).

Table 42: Frequency of Practitioners that seek Guidelines

There is a need for Guidelines	Frequency	Percentage (%)
Agree	86	97.7
Disagree	2	2.3
TOTAL	**88**	**100**

4.20 Feedback to Participating Doctors

Of the doctors that responded to the survey, 90.7% (n=78) indicated their keenness to receive feedback on the results of the survey, whilst only 9.3% of doctors (n=8) did not want any feedback (Figure 6).

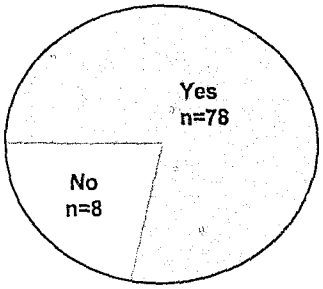

Figure 6: Respondents that request feedback

A similar response (88.8%) was obtained from doctors who held family medicine qualifications.

5. DISCUSSION

5.1 Response Rates

The response rate for this survey is disappointingly low. Even though low, it fits in with the general trend found by McAvoy & Kaner in the U.K. that reported response rates to questionnaire surveys among general practitioners are dropping.[24] Reasons for sampling errors, as recorded in this particular survey, has been detailed in the results section 4.1.

However, other possible reasons for non-response, include:

- **Timing of study:**

  This study was undertaken in the peak of the winter flu epidemic in South Africa. Doctors may have been too busy with clinical medicine to have bothered with a research questionnaire.

- **Time needed to complete questionnaires:**

  Each questionnaire takes 10-15 minutes to complete. This could have inhibited some practitioners.

- **Choice of study topic:**

Some doctors may have felt awkward about the topic in question, as opposed to the commonly discussed topics such as cardiac disease. Others may have been uninterested in, or may dislike the topic being researched.[24] It is possible that prostate cancer research would appeal more to males than females; hence more males (78.4%) than females (21.6%) responded to this survey (Figure 1). Some doctors may also have felt threatened by their lack of knowledge/expertise in a field of medicine that is commonly ignored by doctors, universities and patients. As stated by McAvoy & Kaner this may be true especially of the older, more experienced, less well qualified and often single-handed, more stressed doctors.[24]

Conversely, it may be argued that young doctors are more likely to respond to postal surveys. In this study, 45.5% of the respondents were under the age of 40, and there was a small number of recent graduates (5.7%). The majority of respondents (31.03%) were in family practice for 6-10 years only (Figure 2).

- **Lack of interest in academic medicine:**

Apathy by general practitioners to involve themselves in research/academic medicine, fearing that research activities tend to disrupt the general practice workload.[25]

- **Lack of incentive to complete the questionnaire:**

  This survey did not offer a financial or other incentive to complete the questionnaire, other than a promise to give results to those respondents that request it. Mark Cottrill felt that in Britain the offering of incentives (e.g. a holiday) was an important aspect in getting completion of questionnaires.[26]

- **Use of the telephone to increase response rates:**

  In this study, 53 non-responders were telephoned and urged to complete the questionnaires sent to them. Bonnie Sibbald et al[26] have suggested that actual telephone administration of questionnaires to postal non-respondents is a better idea than the use of self administered questionnaires. In their study, they found that response rates increased to beyond 80%, especially in practices that employ social counsellors. On the negative side though, the costs of obtaining a completed questionnaire by telephone were approximately four times higher than by post.[27]

- **Applicability of research project:**

  According to Sue Lydeard, the single most important factor in all surveys, is the perceived value or general applicability of the research project to the respondent.[27] Stated simply, general practitioners want to know how the results of a survey will affect their practices. In this study, an overwhelming 90.7% of respondents indicated their keenness to receive feedback on the results of the survey (Figure 6).

5.2 Demographics of Study Sample

5.2.1 Age and Sex distribution of Respondents

More males (78.4%) than females (21.6%) participated in the study. The Health Professions Council of South Africa (HPCSA) does not have data related to the sexual distribution of family practitioners in South Africa. The proportion of females to males (1 : 4) found in this study is probably low, given that most medical schools are graduating a near equal ratio of males and females at present[28].

Almost a third of the respondents (31.8%) were above age 45, with a small number of young graduates (5.7%).

Over forty five percent of respondents were themselves in the age group that would not statistically be at risk for cancer of the prostate, i.e. below age 40.

These findings may suggest that interest in the subject of prostate cancer is not limited to the "target doctor population" only, i.e. male doctors above age 40.

5.2.2 Qualifications of Doctors

The majority of the respondents had their undergraduate training in Gauteng (63%), with 33.3% of respondents having studied at Pretoria University.

The largest number of postgraduate qualifications were awarded by the University of the Witwatersrand (37.5%).

Based on the Medical Council Register of 1997, there were 8673 doctors in Gauteng with no specializations. According to the Academy of Family Practice, there are approximately 3500 general practitioners in Gauteng. In 1997, less than 10% of GP's (i.e. 295 doctors) had registered Family Medicine qualifications.

A similar representation was found among the respondents in this study, with 11.36% of the total doctors sampled holding family medicine postgraduate qualifications.

The Medical Council Register of 1997 lists 856 GP's (±24%) as holders of additional (non-specialist) qualifications. In this study sample, there were 24 additional qualifications (i.e. 27%). Hence, in terms of postgraduate qualifications and family medicine qualifications, this study sample was a good representation of family practitioners in Gauteng.

5.2.3 Number of years in family practice

The majority of doctors (31.03%) were in family practice for 6-10 years (Table 9).

Almost equal number of respondents were received in the groupings 1-5 years, 11-15 years, 16-20 years and 21-25 years in family practice. One would therefore expect little or no bias in the study responses, as doctors with varying degrees of experience (as determined by the number of years in family practice), were sampled.

5.2.4 Geographical location of the respondent's practices

Respondents were received from across the whole of Gauteng, from predominantly urban "white" areas to township "black" areas. Most of the doctors sampled had their practices in Johannesburg and suburbs (n=25) and Pretoria and suburbs (n=18). One is unable to infer exactly from this study what proportion of practices treated "Black" patients, and what proportion treated "White" patients, due to the spill-over of patients across racial lines, and the development of urban and peri-urban informal settlements. Retrospectively, to have requested this information would have given important data regarding screening practices in specific racial groups.

However, the traditionally Black areas (Townships and Soweto), were underrepresented, with less than 10% of respondents working these areas (Table 10). This is important in the light of the fact that the majority population group in South Africa (and in Gauteng) is Black.

The poor response rate, and the skewed geographical distribution of respondents could bias some results, such as the rates of PSA testing.

5.3 Knowledge of Gauteng Family Practitioners regarding Prostate Cancer Epidemiology

If the incidence of prostate cancer in South Africa is similar to that in Australia, then it can be assumed that Gauteng family practitioners had poor knowledge of prostate cancer screening, with only a third (33.7%) stating that the peak age of **incidence** for prostate cancer was in the age group 70-79 (Table 11). Only half the respondents (50.6%) knew that **deaths** from prostate cancer was most likely in the age group 70-79 years (Table 12).

These responses however suggest that Gauteng family practitioners' knowledge is on par with those of their Australian counterparts, where 46% of general practitioners reported that the largest number of patients with prostate cancer was in the age group 70-79 years, and 49% knew that the age group with the largest number of deaths is 70-79 years. [16]

In the USA, most deaths from prostate cancer are reported in the age group 75-84 (41.7%)[29] (Figure 7). No South African figures exist for mortality from prostate cancer.

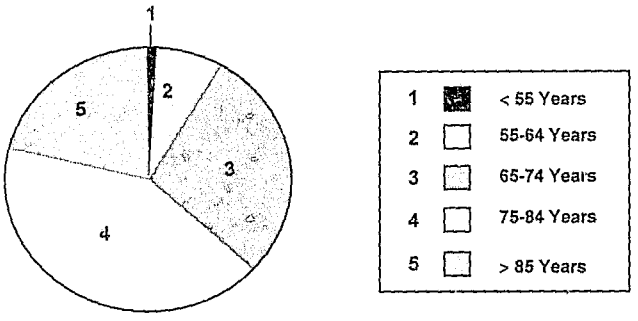

Figure 7: Age distribution of deaths from prostate cancer in the USA.

A large proportion of Gauteng respondents (84%) knew that the PSA level of <4ng/ml was considered to be within normal limits (table 22).

Even though their knowledge regarding the epidemiology of prostate cancer appeared to be poor, 95.5% of doctors were of the opinion that early diagnosis improves survival (Table 13).

5.4 Attitudes and Practices of Gauteng Family Practitioners.

5.4.1 The DRE in prostate cancer screening.

The purpose of the DRE is to evaluate the size and consistency of the prostate. The size, position and number of nodules should be noted, and whether there is unilateral or bilateral involvement. Stony hard induration or a nodule of the prostate palpated on DRE suggests malignancy. The differential diagnosis includes granulomatous prostatitis, prostatic TB, prostatic calculi, and other more unusual prostatic diseases. The firm and nodular, irregular prostate is pathognomonic of prostatic carcinoma[2].

An enlarged prostate as detected with DRE, should be followed up by other modalities of diagnosis (PSA, Transrectal Ultrasounds and biopsy).

The benefit of using the DRE to detect surgically resectable prostate cancer has been known, and used, since the early 1900's. At this time, Young proposed the institution of regular rectal examinations in men[15].

Amongst Gauteng family practitioners, 87.4% felt that the DRE was an effective tool in diagnosing prostate cancer, despite its low sensitivity and specificity. 92.4% felt that one should screen using the DRE with approximately 76% of the respondents actually using the DRE for screening. This corroborates closely with the results of the Australian study, where 56 doctors (68%) said they should screen, and only 37 doctors (45%) actually screened[16] (n=83).

Of those doctors that said they screened using the DRE, 40 doctors (61.5%) were aged 41 years and over. This may imply that "older" doctors were more comfortable with doing the digital rectal examination, compared to "younger" doctors.

Of the Gauteng general practitioners that did not screen, 16.67% said they did not have time for screening and 8.33% felt that the DRE was distasteful. Significantly, no doctors mentioned the low rates of specificity and sensitivity.

In those Gauteng family practitioners that actually use the DRE in screening, the test has been vindicated with 46.86% of doctors recalling 1-5 patients with tumours in one year.

One respondent who did not screen with the DRE had subsequently recalled 1-5 patients with cancer in one year. These patients were possibly diagnosed by a specialist or another generalist doctor.

Conversely, 16 respondents (94.1%) that did not screen for prostate cancer with the D.R.E. had zero patients diagnosed with prostate cancer in one year. It may obviously therefore be concluded that if one does not screen for cancer, one will not diagnose cancer!

Over a five year period, 45.7% of doctors used the DRE as an initial test in diagnosing between 1-5 patients with cancer prostate, and 22.2% of general practitioners diagnosed between 6-10 positive cases (Tables 20 and 21).

5.4.2 The PSA in Prostate Cancer Screening.

When asked what the normal values for PSA was, 84% of respondents knew that the normal range of PSA is 0-4ng/ml. What is disconcerting is that 16% of doctors would possibly misinterpret a PSA level if normal values did not accompany the patients blood report (Table 23). This question was, however badly phrased, with options for answers being <4, <10, <15, <20 and >20. The options 0-4, 5-10, 11-15, 16-20 and >20 would have been better, as any value <4 is also <20.

There was a high congruence between the number of doctors that felt the PSA was an effective screening test (89.5%), and the number of doctors that actually screened using the PSA as a tool (84.5%). This was in direct contrast to the Australian study, where only 50% of doctors use the PSA to screen, and less than one third (31%) felt they should screen.[16]

Mason and Elwyn suggest that whilst there is an increase in the number of general practitioners requests for PSA, controversy rages as to who should make PSA requests, and for which patients[8].

They suggest the following approach:

- PSA testing should not be done on asymptomatic men without full counselling about the implications, problems and uncertainties surrounding the test;

- PSA testing should not be withheld from asymptomatic patients

In comparing the use of the DRE and PSA in screening, more doctors in Gauteng used the PSA (84.5%) than the DRE (75.6%), as opposed to Australian GP's in Sladden's study who used the PSA less. (50% used the PSA, and 66% used the DRE).[16]

5.4.3 The TRUS in Prostate Cancer Screening.

Whilst 64.3% of respondents felt that the TRUS was effective in screening asymptomatic patients, the majority of respondents (88.6%) did not screen using the transrectal ultrasound.

This may be a reflection of the lack of ultrasound facilities in most family practices, as well as time and cost constraints.

Most authors feel that for the TRUS to be an effective and reliable tool to diagnose, it:

a) Must be used by a skilled operator

b) Must be used in conjunction with a biopsy

As a single test, Ellis et al found that PSA was superior to DRE or transrectal ultrasonography in predicting cancer.[15] The combinations of PSA plus TRUS and PSA plus DRE were superior to DRE plus TRUS. They concluded that PSA was the single most accurate of the three diagnostic tests available.

The following algorithm has been proposed by Segone for the rational use of the DRE, PSA, TRUS and biopsy in the diagnosis of prostate cancer. [10]

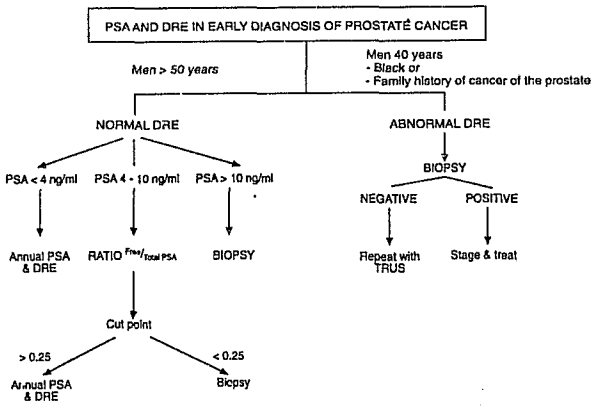

Figure 8: The role of PSA and DRE in the diagnosis of Prostate Cancer.

5.4.4 Patient-Initiated versus Doctor-Initiated Screening.

Whilst most doctors (83.0%) preferred doctor-initiated screening, over one-third of respondents (36,36%) would be happy to screen irrespective of whether the initiative for screening originated from the patient, or from the doctor. This contrasted strongly with the Australian study that found that most general practitioners preferred patient-initiated, rather than doctor-initiated screening.[22] Weller et al conclude that whilst patient-initiated screening helps to remove general practitioners anxieties, general practitioners are responsible for providing information and co-ordinating the screening process. Patients need to be reminded of the potentially harmful effects of screening, e.g. false positives and false negatives. In keeping with their role as manager of resources as expressed by McWhinney, general practitioners need to contain the cost of widespread screening. [23]

5.5 Doctors' and Patients' Knowledge.

As noted previously (section 4.14) there is a problem with interpretation of this aspect. Nevertheless, just over half the respondents (53.4%) said they had received adequate education about strategies for prevention of prostate cancer, with only 10% of doctors receiving their knowledge as undergraduates (Figure 4). Thus, some 43% of doctors have acquired their knowledge of prostate cancer screening as postgraduates, and most of this knowledge was gained from CME and journals. This emphasises the need for doctors to continue learning even after graduating from universities. It also begs the question : If doctors are inadequately trained how can we expect them to play an important role in primary care preventative programmes?

The majority of respondents (78.4%) felt that patients were not knowledgeable with regards to prostate cancer screening (Table 36). This correlates well with the respondents preferring doctor-initiated, rather than patient-initiated screening.

Eighteen Gauteng general practitioners used the word "ignorant" to describe their patients' knowledge of prostate cancer and screening. Mercer et al found that Canadian men also lacked knowledge of prostate cancer and screening tests[7]. Sixty one percent of respondents first heard about DRE from their doctor and 15% from the media. Mercer et al. concluded that men require age-and education-specific information regarding the risks and benefits of prostate cancer screening. Likewise, if the South African public is less medically aware (as indicated by some respondents), then the role of the general practitioner as educator is heightened. Only then can the patients make informed choices in screening procedures. PSA testing should not be withheld from asymptomatic patients.[8]

Nearly all doctors (96.5%) felt that the responsibility of screening patients rested with the generalist, rather than the specialist (Table 37). In motivation, 70.7% of doctors quoted their role as primary gatekeepers. Only 12.2% of doctors felt that the patient should be referred to a specialist for further investigation, after initially being screened by the generalist.

5.6 Racial differences in Screening for Prostate Cancer in South Africa.

The incidence and mortality from prostate cancer has been increasing steadily in Black Americans since 1950, to the extent that Black men have a 85% greater chance of being diagnosed with prostate cancer than their white counterparts.[19,20] Significantly though, Wahnefried et al found that Blacks were less likely to be screened for cancer of the prostate. Further, they found that Blacks were less likely to have a regular doctor, or ever have had a DRE, or PSA testing. [19]

Yet, Black Americans had a significantly higher rate of PSA greater than 4.0ng/ml, and a lower rate of DRE findings suspicious for cancer than White Americans. [21] Blacks also had a higher prevalence of clinically (but not pathologically) advanced cancer.[20]

Smith et al[21] thus conclude that:

- Rectal examination may miss more cancers in Black men than White men.

- Sensitivity for prostate cancer detection may be optimised in Black men less than 50 years by using lower screening cut-offs (i.e. less than the standard 4.0ng/ml).

Amongst the reasons advanced for the higher mortality rate in Black Americans, were: [20]

- Late detection resulting from less use of cancer detection methods.

- Reduced access to screening and diagnostic facilities.

- Suboptimal prostate cancer treatment.

Thus, it is very evident that there are racial differences in screening for prostate cancer amongst Americans. Screening tests also take on different values, with the PSA having a larger role in screening amongst Black Americans.[19]

Amongst Gauteng family practitioners, almost a quarter (23%) of doctors felt that a racial difference in screening programmes existed (Table 38). Half the respondents (50.6%) of doctors specifically felt that more Whites than Blacks (Africans, Indians, Coloureds) are screened for prostate cancer in South Africa. Some of the reasons advanced for this racial difference were:

- Black South Africans are generally unable to afford screening tests in the private sector, as the majority are not on medical aid.

- State health institutions (public sector) do not practice screening procedures on black patients.

- Whites have a greater affordability and therefore accessibility to private care. Whites are more aware of prostate cancer, and therefore complain more.

Perez and Tsou found that in the United States private patients were six times more likely than clinic patients to have had PSA screening, and seven times more likely to receive both the DRE and PSA within one year.[12] The South African parallel is vivid, if one considers that most of the state/clinic patients are Black, and most of the private patients are White.

Wahnefried et al claim that "since the value of prostate cancer screening has yet to be proven, the fact that fewer blacks (American) have received testing does not necessarily imply inferior care, but it is certainly different care."[19]

5.7 Guidelines for Prostate Cancer Screening.

Although Segone[10] and Denis[30] suggest that screening in Whites should occur from age 50, and Blacks or those with a positive family history for prostate cancer from age 40, Gauteng family practitioners take this distinction further (Table 41). Most respondents (i.e. >50%) felt that screening should *never* be done in asymptomatic patients before age 30. A third of the doctors would prefer to screen from age 40 annually, and 27.7% would prefer to screen every 2nd year from age 40. At age's 50-60 years, more than 60% of respondents felt that screening should be done annually. At ages 70 and 30, approximately equal numbers of respondents felt that screening should be performed 6 monthly and annually.

Almost one fifth of over-zealous doctors would relinquish their roles of "manager of resources" and would begin screening too early for prostate cancer, i.e. every five years from age 20. On the opposite end of the spectrum, some 4.8% of doctors would want to screen only every 10 years from age 50. Such extremes in screening behaviour would suggest the need for education and uniform guidelines amongst Gauteng generalists.

Sladden and Dickenson concluded in their Australian study that "clear and precise evidence-based guidelines for screening (for prostate cancer) is necessary".[16] These sentiments have been echoed by the Gauteng family practitioners, with all, except two doctors (i.e. 97.7%), stating that there was a need for uniform guidelines for family practitioners in South Africa (Table 42).

6. LIMITATIONS AND RECOMMENDATIONS

6.1 Bias

Bias was introduced into the study when a low response rate (23%) was received. This low response rate however is in line with the general trend reported by McAvoy and Kaner that response rates to questionnaire surveys among general practitioners are dropping.[24]

Furthermore, the sample population may not necessarily be representative of all the family practitioners in Gauteng, as the population lists may not be comprehensive, or up to date. Amongst the problems encountered were incorrect addresses of doctors, doctors having emigrated from South Africa, and deceased doctors still being on the SAMA list.

6.2 Limitations

The questionnaire was self-administered. As such, it is unclear as to what extent honest responses were obtained. The respondent may have filled in answers that he/she may have thought to be appropriate, but not what he/she necessarily practices.

Furthermore, some practitioners may have pre-read on cancer of the prostate, before attempting to fill in the questionnaire.

Content validity of the survey was addressed by modifying and using questions from similar surveys in other countries. One would assume that in the absence of similar South African surveys, the questionnaire would be valid.

The options presented for doctors to choose from, in the PSA normal-values question, should have been more specific, as alluded to in section 4.11.

The phrasing of the question on racial identification was ambiguous and lacked clarity. Retrospectively it may have been a better idea to divide the question into two parts, viz.:

a) What racial group do you class yourself (doctor)?

b) What proportion of your patients are Black, and what proportion are White?

If Gauteng is the richest province in South Africa, as measured by the earning capacity of the population, then the implication is that more people would be able to afford private health care in Gauteng, as opposed to other provinces. The lower affordability of private health care would result in less screening procedures in the other provinces. Thus it may not be fair to generalise the results of this survey in Gauteng, to the broader population of South Africa.

6.3 Recommendations

This study would have lent itself to greater validity and generalisation, had the response rate been greater than 23%. The suggestion by Bonnie Sibald et al that postal non-responders be subsequently interviewed telephonically, should be used in other studies, to increase the response rates.[26]

Future South African studies may investigate what proportion of Blacks to Whites are screened at individual practices, and what are the pick-up rates for cancer of the prostate amongst Blacks compared to Whites.

Whilst Gauteng doctors perceive private family practices do more screening than state institutions, it would be interesting to see to what **extent** such selective screening practices take place.

We are well aware that inequity exists in the delivery of government health care in the different provinces of South Africa, due to budget constraints. A stratified random sample of different practices (e.g. two clinics or hospitals per province) would demonstrate if there is a big variability in screening programmes across South Africa.

7. CONCLUSION

Even though the medical literature is peppered with controversy regarding the benefits of screening asymptomatic patients for prostate cancer, recent studies suggest that screening definitely reduces morbidity and mortality. [12, 18.] In keeping with this trend, Gauteng family practitioners use the DRE and PSA extensively to screen asymptomatic men.

The racial difference found in screening procedures in the USA, has been mirrored in Gauteng, where more Whites than Blacks are screened for prostate cancer. In South Africa this may be reflective of the socio-economic imbalances of the past. It may also reflect upon the emphasis that state hospitals/clinics put into curative, rather than preventative medicine.

With doctor-initiated screening the mainstay of early detection, the role of the general practitioner in educating the public about prostate cancer is enhanced.

There is a need for uniform guidelines that South African family practitioners can use confidently and competently in screening for prostate cancer; an illness in which the incidence threatens to increase dramatically as we enter the new millennium.

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APPENDIX A

SUMMARY : RESEARCH PROTOCOL

Prostatic cancer is a common and serious illness, with a high morbidity. Yet, the overall benefit from widespread screening for prostate cancer is still unclear, with conflicting international recommendations for screening. This study is therefor an attempt to achieve a South African perspective on screening for prostate cancer by family practitioners.

The knowledge attitudes and practices of family practitioners in Gauteng, is to be evaluated, by means of a cross-sectional descriptive study. The study population includes all family practitioners in Gauteng, as defined by MASA. 400 (four hundred) doctors will be selected by simple random sampling methods to participate in the study. The measuring tool is a self-administered postal questionnaire, consisting of 23 questions.

Data obtained from the returned questionnaires will be analysed, using the Epi-Info 6 Computer Programme. It is envisaged that the data obtained will provide information on current screening practices, and whether family practitioners in Gauteng have a need for local guidelines pertinent to medical practice in S.A.

Results in the study will be made available to those participants in the study that request it (through the separately returned postcard). Results may also be published in family practice journal(s).

SUMMARY/ABSTRACT

The overall benefit from widespread screening for prostate cancer is still unclear, and indeed controversial. The knowledge, attitudes and practices of family practitioners in Gauteng, RSA, is to be evaluated, by means of a self-administered questionnaire.

It is envisaged that the data obtained will provide information on current screening practices, and whether family practitioners in Gauteng have a need for guidelines pertinent to medical practice in South Africa.

1. INTRODUCTION

1.1 LITERATURE REVIEW

Prostate cancer is the most common cancer reported in American men[1], with the third highest mortality rate. It is the third leading cause of death from cancer among men in Canada[2].

Despite prostate cancer being an important cause of morbidity and mortality among men, there are conflicting viewpoints on whether screening of asymptomatic men should indeed take place.

The Canadian Cancer Society has recommended that men over 40 years of age have a regular check up including a digital rectal examination (D.R.E.) to detect changes in the prostate gland[2].

The American Cancer Society, and the US National Cancer Institute have also recommended an annual D.R.E. beginning at age 40. However, the US Preventive Services Task Force[1] found insufficient evidence to recommend for, or against, routine D.R.E. as an effective screening test for prostate cancer in asymptomatic men.

The use of transrectal ultrasound and serum tumour markers were also not recommended for routine screening.

These recommendations have been echoed by the Royal Australian College of General Practitioners, and yet GP's in Southern Tasmania are unclear as whether to screen or not. Some think that they should screen, but few do so consistently[3].

In South Africa the Cancer Association recommends annual screening from age 50. The above conflicting recommendations may lead to confusion amongst S.A. family practitioners. This study therefore is to achieve a South African perspective on screening for CA Prostate amongst family practitioners.

Denmark - Wahnerfried et al found interesting and important differences existed between American Blacks and Whites in relation to access to screening, with a major factor being that Blacks were less likely to have a regular doctor. Hence screening was less likely to occur amongst Blacks[5]. In South Africa, no information exists as to whether similar cultural differences exist. Hence, it would be important to see whether doctors screen appropriately and equally for all race groups.

1.2 MOTIVATION FOR THE STUDY

Prostatic cancer is a serious illness, with a high morbidity. Early detection of this cancer through screening procedures by family practitioners is likely to lead to a decreased morbidity.

1.3 AIM OF STUDY

To establish the knowledge, attitudes and practices of Gauteng family practitioners with regards to screening for prostate cancer.

1.4 OBJECTIVES

1.4.1 To establish what knowledge exists amongst family practitioners with regard to screening for prostate cancer.

1.4.2 To determine to what extent family practitioners screen for prostate cancer.

1.4.3 To determine what tests are used for the diagnosis of prostate cancer.

1.4.4 To determine if there is a cultural difference in the way screening is practised in South Africa.

1.4.5 To determine whether guidelines are needed by family practitioners.

2. METHOD

2.1 DEFINITIONS OF TERMS

2.1.1 Screening

A *Screening procedure is one* that is applied to an unselected population to identify those members who are either diseased or at risk for a disease[6].

2.1.2 Prostate Cancer

This is a malignancy of the prostate gland occurring most commonly after age of 60 years, and is rare below the age of 50 years.

2.1.3 Family Practitioner

Generalist Doctor who works as a "non specialist", in the study area, attending to patients within the family, irrespective of the patients age group or specific ailment.

2.2 STUDY DESIGN

A cross-sectional descriptive study will be undertaken using a questionnaire.

2.3 STUDY POPULATION AND SAMPLING

The study population includes all family practitioners in Gauteng, as defined by MASA. Approximately 20% of the study population will be sampled, i.e. 400 questionnaires will be posted to doctors. A proportional random sample will be obtained. Based on an expected response rate of 40%, ±160 completed returned questionnaires are expected.

2.4 MEASUREMENTS

The measuring tool is a self-administered questionnaire consisting of twenty three (23) questions. These questions comprise subsets for demographic data, knowledge of doctors, as well as attitudes and practices of doctors. These questions were devised using the Australian studies as a guide③④.

Questionnaires will be posted to the sample group, together with an independently returnable post card acknowledging receipt and completion of the questionnaire. Those that do not return the post card within one month will be telephoned to remind them to partake in the study. A stamped reply envelope will be included in the original posting, to encourage return of completed questionnaires.

2.5 PILOT STUDIES

A pilot study will be undertaken prior to the main study, to establish whether flaws exist in the study design/questionnaire. Based on recommendations from the pilot study, amendments will be made to the final questionnaire. Ten doctors will be asked to partake in the study, and they will be excluded from the main study.

2.6 LOGISTICS

It is expected that from the time of posting of questionnaires to family practitioners, to the time of receipt of completed questionnaires, 3 months is necessary. Analysis of results must be accompanied by further review of the literature.

3. ANALYSIS

Data obtained from the returned completed questionnaires will be analysed, using the Epi- Info 6 computer programme. Data will be described using frequencies, rates and proportions for categorical variables, and measures of spread and location for continuous variables. Comparisons between groups will be made using Chi Square tests and Students t test where applicable. Multivariate analysis techniques might be incorporated. Statistical advice has been sought from a MRC statistician.

4. LIMITATIONS

4.1 The sample population may not necessarily be representative of all the family practitioners in Gauteng, as the population lists may not be comprehensive, or up to date.

4.2 Being self-administered and a postal questionnaire, the response rate may not be as good as expected.

4.3 Obtaining honest responses may be a problem.

4.4 Some practitioners may pre-read on cancer of the prostate, before attempting to fill in the questionnaire.

5. RESOURCES

The cost of the study is expected to be approximately R3500 and avenues for funding is being sought.

6. ETHICAL AND LEGAL CONSIDERATIONS

All doctors will be assured that confidentiality will be maintained at all times. Respondents will not have to give information regarding their names, phone numbers, or addresses of their practices. A briefing letter will be sent to the doctors informing them of the proposed research. Consent will be sought in this letter. A returned questionnaire will be assumed to be written consent.

7. REPORTING OF DATA AND IMPLEMENTATIONS OF RESULTS

Doctors that indicate on the separately returned postcard that they would like feedback of the research, will be provided with such information.

8. REFERENCES

1. Fisher M, Guide to Clinical Preventive Services : An assessment of effectives of 169 Interventions: Report of the US Preventive Services Task Force 63 - 67.

2. Canadian Task Force on the Periodic Health Examination, 1991 Update : 3 Secondary Prevention of prostate cancer. Can.Med Association J 1991, 145:413 - 428.

3. Sladden MJ, Dickenson JA. General practitioners attitudes to screening for prostate and testicular cancers. The Medical Journal of Australia 162: 410 - 412, 1995.

4. Weller D, Hiller J, Beilty J, et al. Screening for colorectal cancer. Knowledge, attitudes and practices of South Australian GSS. Med J Aust 1994, 160: 620 - 624.

5. Denmark - Wahnerfried et al : Knowledge, beliefs and prior screening behaviour among Blacks and Whites reporting for prostate cancer screening. Urology 46:346 - 351, 1995.

6. Mc Whinney IR. A textbook of Family Medicine. Oxford University press : 1989.

9. APPENDICES

9.1 Questionnaire

9.2 Letter to general practitioners to obtain consent, and to inform doctor of proposed research.

9.3 Letter of approval from ethics committee.

APPENDIX B

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

COMMITTEE FOR RESEARCH ON HUMAN SUBJECTS (MEDICAL)
Ref: R14/49 Naidoo

CLEARANCE CERTIFICATE PROTOCOL NUMBER M980121

PROJECT	Prostatic Cancer Screening: Knowledge, Attitudes and Practices of Gauteng Family Practioners
INVESTIGATORS	Dr GV Naidoo
DEPARTMENT	Family Medicine, Private Practice
DATE CONSIDERED	980130

DECISION OF THE COMMITTEE *

Approved unconditionally

DATE 980130 CHAIRMAN.....(Professor P E Cleaton-Jones)

* Guidelines for written "informed consent" attached where applicable.

c c Supervisor: Dr BHW Sparks
Dept of Dept of Family Medicine, Wits University

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DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and ONE COPY returned to the Secretary at Room 10001, 10th Floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

DATE .....SIGNATURE .....

PROTOCOL NO.: M 980121

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPENDIX C

Dr. G.V. Naidoo
P O Box 1318
LENASIA
1820
Phone No.: (011) 855-6452
Fax No.: (011) 855-3965

5 June 1998

Dear Colleague

SURVEY: **FAMILY PRACTITIONERS AND PROSTATIC CANCER SCREENING**

I am a postgraduate student studying towards the M FAM MED degree in the Department of Family Medicine, University of the Witwatersrand. I am undertaking research in prostate cancer examination by family practitioners. Your kind participation in this survey is being sought.

It is envisaged that the data obtained will provide important information on current screening practices, and whether family practitioners in Gauteng have a need for guidelines pertinent to medical practice in South Africa.

Your input in this study is important and highly valued. Participation is voluntary and confidential. You may omit any question which you are uncomfortable with. However, I would appreciate it if all questions are answered, as it would lend more information for interpretation.

Please would you:

(a) Complete the attached questionnaire

(b) Return said questionnaire in the enclosed envelope, at your earliest convenience.

(c) Return the postcard separately with your name on it (i.e. do not place the card in the envelope), so that a reminder may be sent to those colleagues who forget, or are delayed, in returning their questionnaire.

If you have any queries or comments, please contact me on (011) 855-6452 or fax (011) 855-3965.

If you would like results of the study to be made available to you, please indicate this in the space provided on the postcard.

Should you wish not to complete the questionnaire, PLEASE RETURN THE QUESTIONNAIRE in the reply envelope enclosed. You may give reasons.

Once again, your co-operation and participation in this study is highly appreciated.

Yours sincerely,

G.V. NAIDOO
(M.B.B.Ch; M.F.G.P.)

APPENDIX D

RESEARCH QUESTIONNAIRE

This questionnaire forms part of research being undertaken regarding prostate cancer in South Africa.

Do you consent to taking part in this survey?

PLEASE TICK	YES	NO
	------	------

If YES, continue with the following questions.

If NO, please return questionnaire in reply envelope attached, with possible reasons.

DOCTOR'S QUESTIONNAIRE

1. Your Age in years (tick)

24 - 30	31 - 35	36 - 40	41 - 45	>46

2. Your Sex (tick)

Male	Female

3. Qualifications

Qualifications	Degree Diploma	University	Year Obtained
Undergraduate(medical)			
Postgraduate (medical)			
Other(s)			

4. Number of years in family practice ..... years

5. Name of town suburb/township in which practice(s) is located. .....

.....

6. Postal code of practice area(s) .....

7. What is the peak age of incidence for prostate cancer in S.A.? (tick)

40 - 49	50 - 59	60 - 69	70 - 79	>80 years

8. In which of the following groups is deaths from prostate cancer most likely?

40 - 49	50 - 59	60 - 69	70 - 79	>80 years

9. Comment on the following statement:

"Early diagnosis (e.g. in the presymptomatic phase) of prostate cancer improves overall survival" (tick)

strongly agree 1	agree 2	don't know 3	disagree 4	strongly disagree 5

10. The digital rectal examination (D.R.E.) in prostate cancer screening:- (tick)

		YES	NO	DON'T KNOW
10.1	Is it effective?			
10.2	Do you screen?			
10.3	Should you screen?			

If answer to 10.2 is **"NO"**, please proceed to question 11. If answer is **"YES"**, go directly to question 12.

11. My reasons for not using the digital rectal examination (D.R.E.) for prostatic cancer screening (tick)

11.1	Sex difference, i.e. female doctor	
11.2	I have no time for screening	
11.3	Screening is a waste of time	
11.4	I find it personally distasteful	
11.5	Patient's could question my sexual preference	
11.6	Patient's will perceive me as being odd/strange	
11.7	I find it uncomfortable with gay/homosexual patients	
11.8	Religious reasons	
11.9	Other (specify) _____ _____ _____	

12. In how many asymptomatic patients in your practice has a D.R.E. led to a subsequently confirmed diagnosis of prostate cancer? (tick)

(a) *over the last 12 months*

Zero	1 - 5	6 - 10	>10 (specify)

(b) over the last 5 years

Zero	1 - 5	6 - 10	>10 (specify)

13. The prostate specific antigen (P.S.A.) in prostate cancer screening (asymptomatic patients):

13.1 A P.S.A. value would be within normal limits if it is: (tick)

<4	<10	<15	<20	>20

13.2 The P.S.A.:

		YES	NO	UNSURE
13.2.1	Is it effective?			
13.2.2	Do you screen?			
13.2.3	Should you screen?			

14. The transrectal ultrasound in prostate cancer screening (asymptomatic patients):

		YES	NO	UNSURE
14.1	Is it effective?			
14.2	Do you screen?			
14.3	Should you screen?			

15. Do you prefer patient-initiated screening (i.e. the patient asks) or doctor initiated screening (i.e. the doctor determines when to screen)? (tick)

Also indicate your reason(s)

	tick	*reason(s)*
Patient initiated		
Doctor initiated		
neither		
unsure		

Comment on the following statements in questions 16 to 20. Where appropriate give reasons for your answer.

16. "I have received adequate education about strategies for the prevention of prostate cancer" (tick)

1: strongly agree	2: agree	3: don't know	4: disagree	5: strongly disagree

explain: .....

.....

17. "The knowledge of patients with respect to prostate cancer, is adequate". (tick)

1: strongly agree	2: agree	3: don't know	4: disagree	5: strongly disagree

explain: .....

.....

18. "Cancer screening is the sole responsibility of the Specialist, not family practitioner" (tick)

1: strongly agree	2: agree	3: don't know	4: disagree	5: strongly disagree

explain: .....

.....

19. Is there a racial difference in the way that screening for prostate cancer is done in S.A.?

YES	NO	UNSURE

explain: .....

.....

20. "More Whites than Blacks (Africans, Indians, Coloureds) are screened for prostate cancer in S.A." (tick)

AGREE	DISAGREE	UNSURE

explain: .....

.....

21. There is a need for uniform guidelines for prostate cancer screening by family practitioners in S.A.

AGREE	DISAGREE	UNSURE

22. Screening for CA prostate in <u>asymptomatic</u> patients in S.A. should be done as follows: (tick appropriate square(s))

<u>FREQUENCY OF TESTS</u>

		1	2	3	4	5	6
	Age of Patient (Years)	every 6 months	annually	every 2 years	every 5 years	every 10 years	never
a	20						
b	30						
c	40						
d	50						
e	60						
f	70						
g	80						

23. With which ethnic group do you most closely align / identify yourself? (tick)

a	Black	
b	White	
c	Coloured	
d	Indian	
e	Other (specify) e.g. Chinese	

24. THANK YOU FOR PARTICIPATING IN THIS SURVEY. WOULD YOU LIKE FEEDBACK ON THE RESULTS ON THIS SURVEY?

YES
NO

If YES, also indicate this in the space provided on the postcard.

PLEASE RETURN COMPLETED QUESTIONNAIRE IN REPLY ENVELOPE

Author Naidoo G V
Name of thesis Prostatic Cancer Screening: Knowledge, Attitudes And Practices Of Gauteng Family Practitioners Naidoo G V 2000

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